

Heat Capacity of the Pressure-Induced Superconductivity in Itinerant Ferromagnet UGe₂

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Recently co-existence of the ferromagnetism and superconductivity was reported in the high-pressure region (1.0-1.5 GPa) of UGe₂^{*}. We performed the heat capacity measurement on UGe₂ under high pressure. At 1.13 GPa, we found a peak corresponding to the transition of the superconductivity. The superconducting temperature T_{SC} and $\Delta C/(\gamma T_{SC})$ are 0.7 K and 0.25 respectively. The superconducting transition was also confirmed by the appearance of the Meissner effect in the ac susceptibility. From these results, we confirm a bulk nature of the superconductivity in UGe₂. The value of C/T ($\sim 100 mJ/mole K^2$) just above T_{SC} at 1.13 GPa is as much as 3 times larger than that at ambient pressure, which indicates a large mass enhancement of quasi particles under high pressure[†].

^{*}S.S.Saxena *et al.*: Nature **406** (2000), 587. A.Huxley *et al.*: to be published in Phys.Rev.B

[†]N.Tateiwa *et al.*: Journal of Physics, Condens. Matter **13** (2001) L17